

GROUP 4

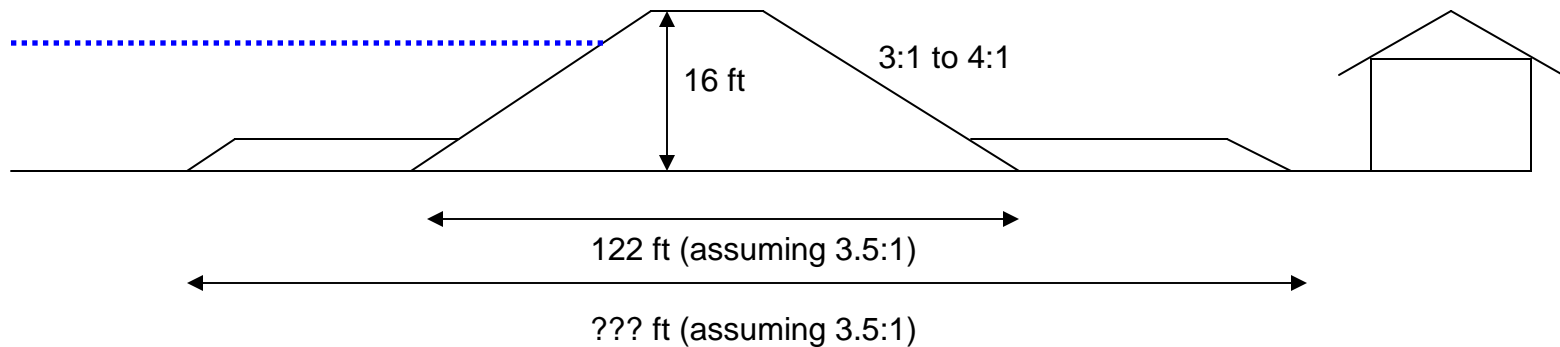
LEVEES

Case 1: Same Alignment

- In areas where alignment will be the same as the existing alignment, consider the following criteria/concepts:
 - Use same/similar centerline
 - Use same footprint (canals & residential either side)

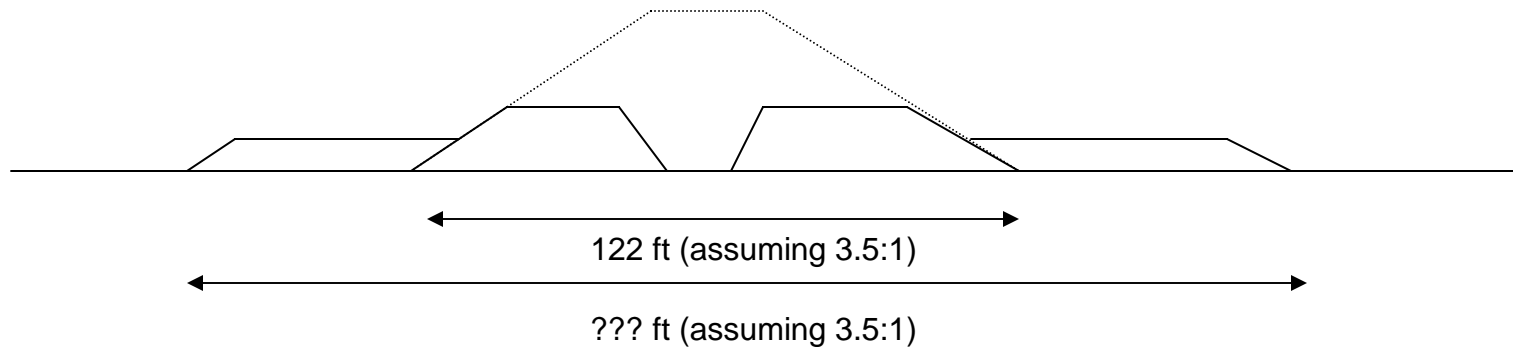
Case 1: Same Alignment

- Existing



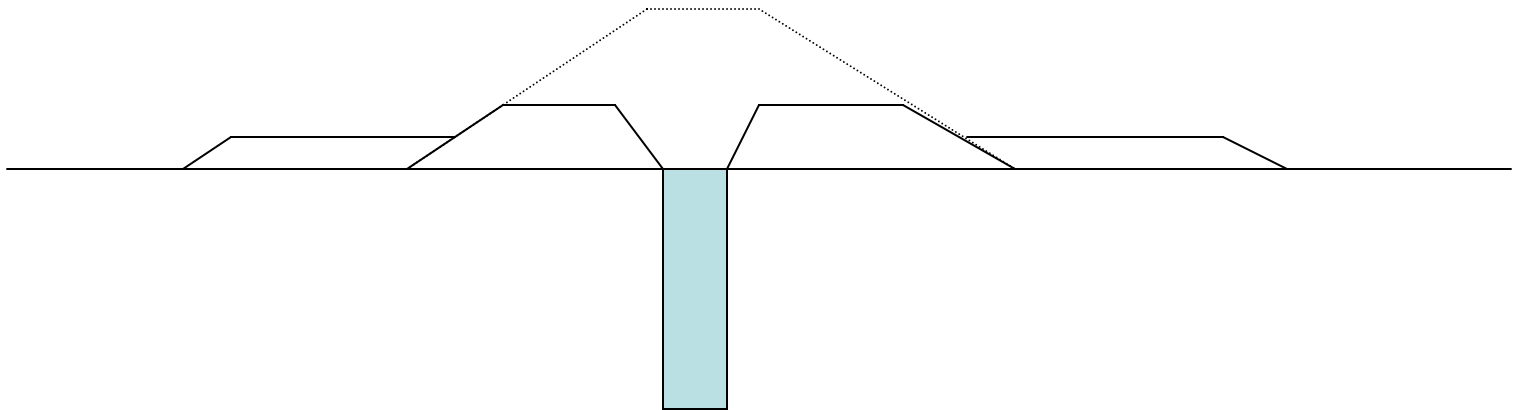
Case 1: Same Alignment

- Cut down



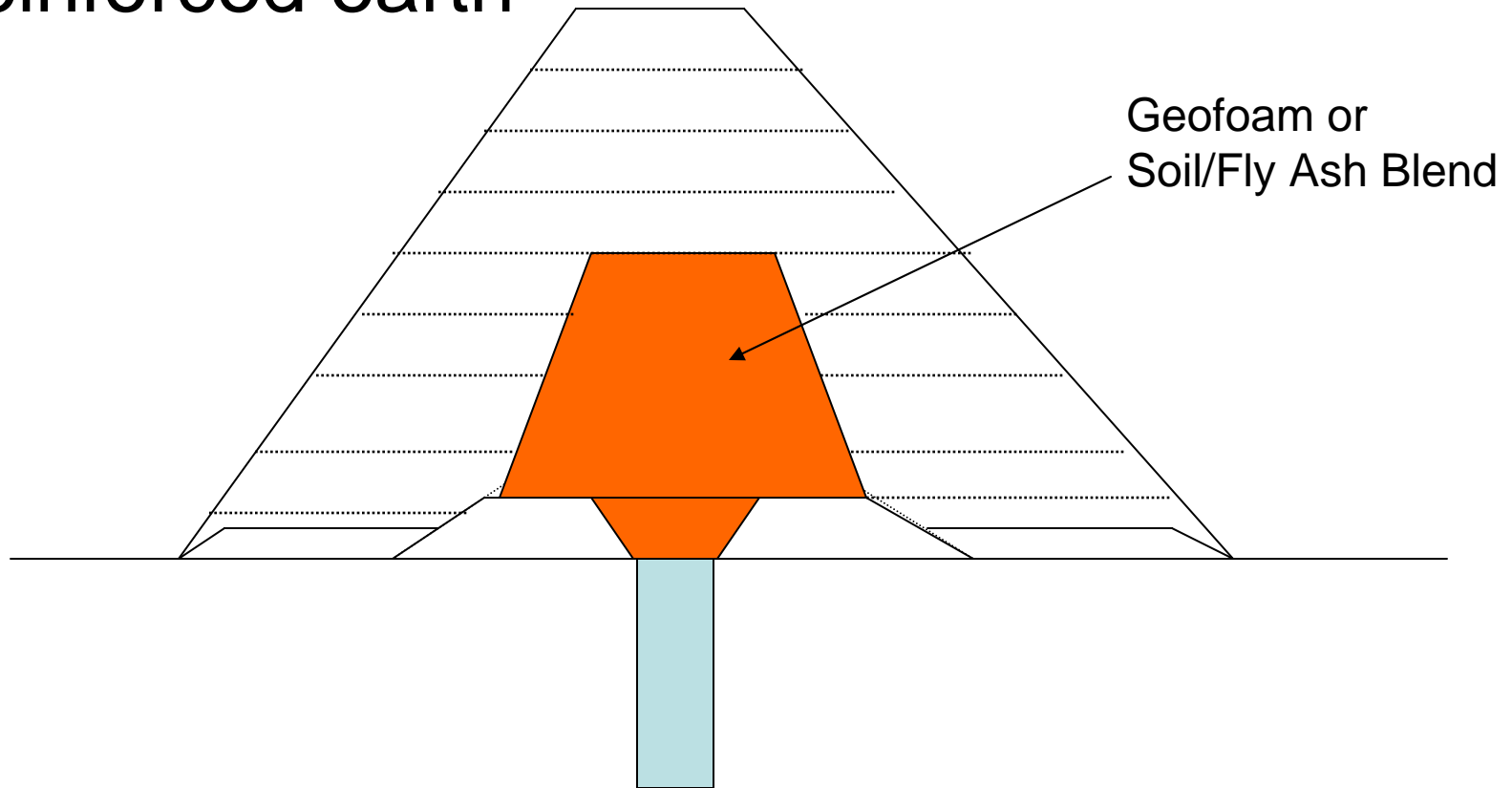
Case 1: Same Alignment

- Cut-off (if necessary)



Case 1: Same Alignment

- Reconstruct w/ lightweight core and reinforced earth



Case 1: Existing Alignment

Pros:

- Steeper slopes → same footprint
- Reduce future settlement
- Core can use much less expensive materials
- Leave material in place
- Easy access for cutoff

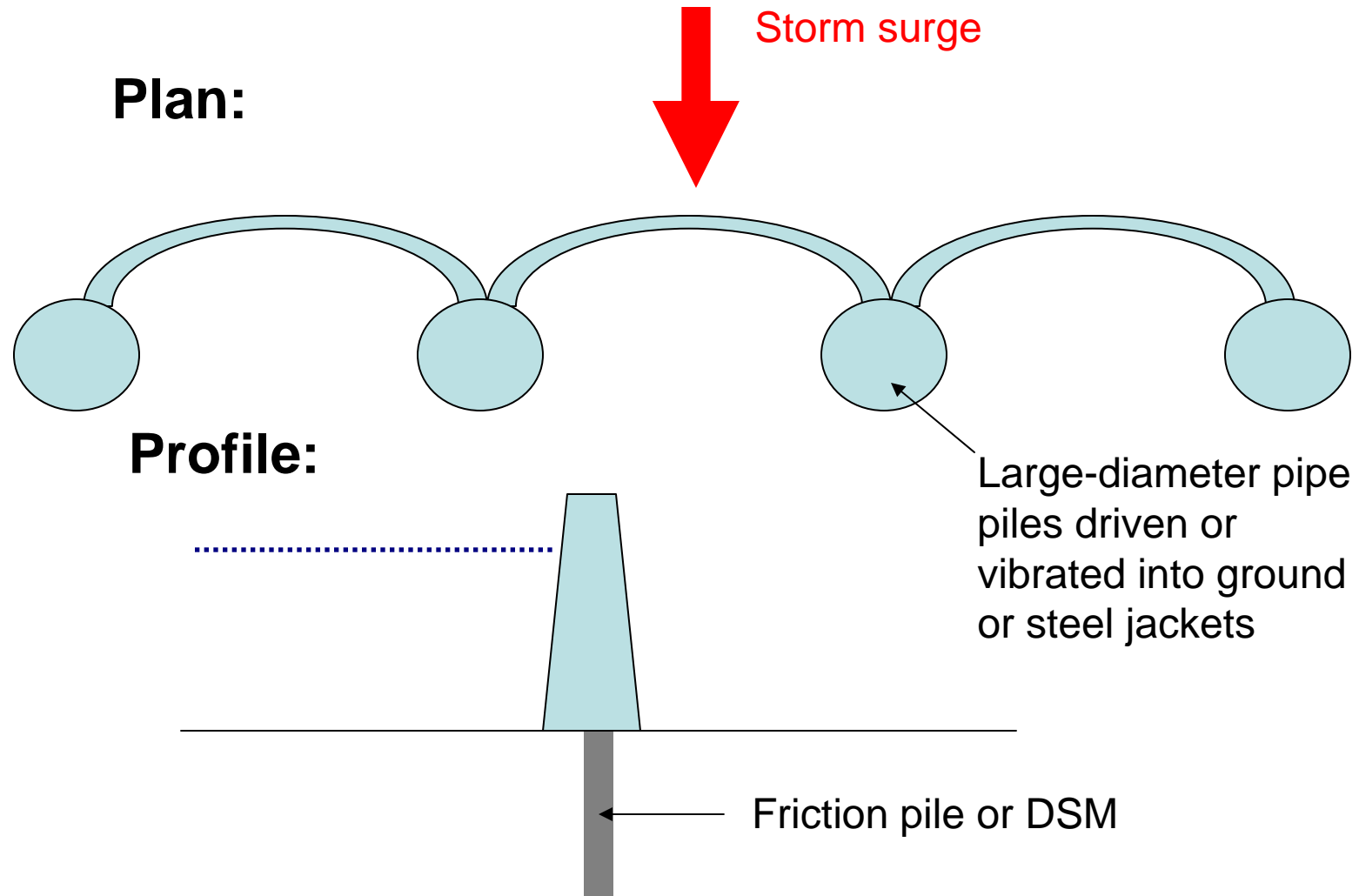
Cons:

- Expense of geo-grid
- With lighter-weight core, need to be concerned about sliding
- Maintenance (i.e., mowing)

Case 2: Concrete Arches

- Concept: Construct large arches using RCC or pre-cast blocks that are pile or DSM supported for dead weight and derive lateral (wave load) resistance from large drilled piers, driven pipe piles or steel jackets
- Also probably need some counterforts
- Length of arches dependent on capacity of piers (100's of feet?)

Case 2: Concrete Arches



Case 2: Concrete Arches

Pros:

- Surge force transmitted via compression to concentrated points
- Ease of installation
- Quick
- Minimal environmental impact

Cons:

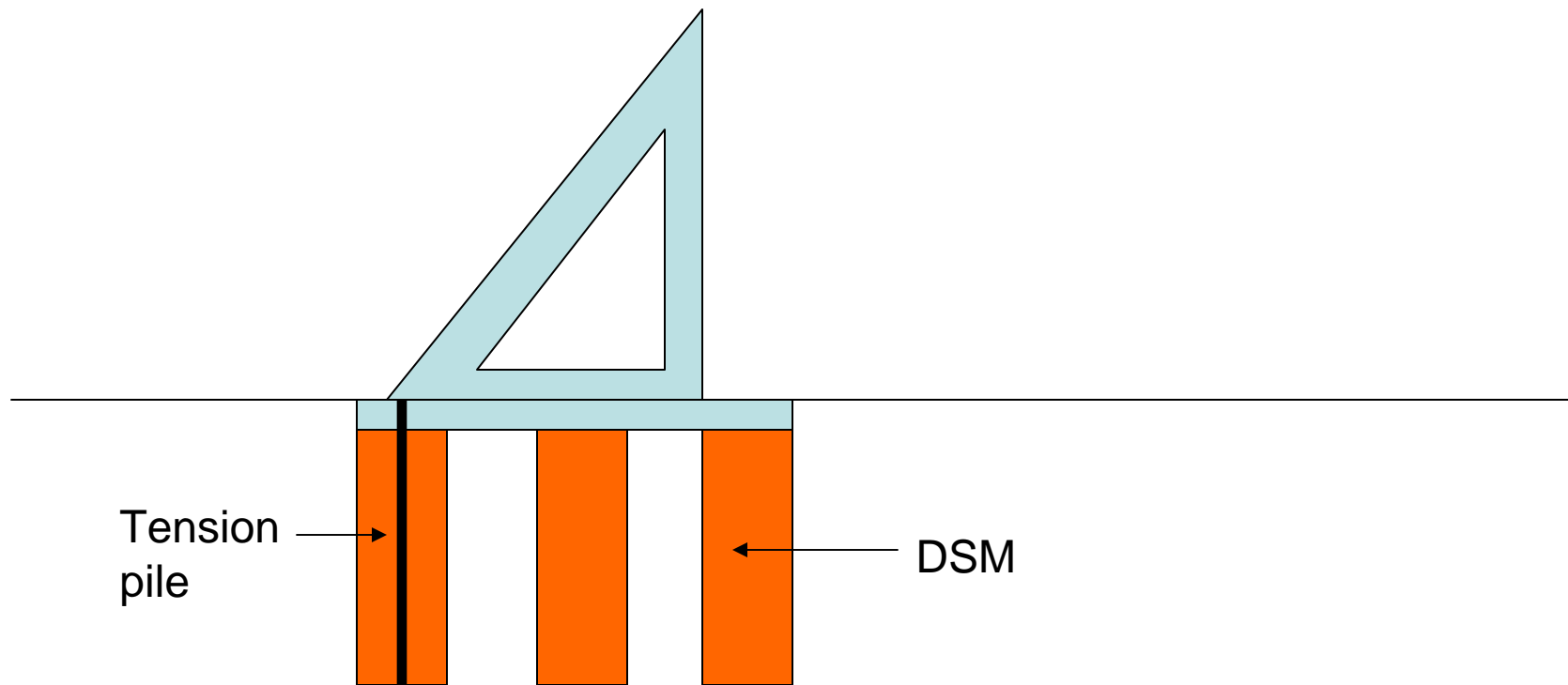
- All materials need to be imported (cement, water, panels, etc.)
- Need to provide for differential settlement at wall/pier contact
- One direction of loading

Case 3: Tilt-Up Panels

- Concept: Create a structure comprised of concrete tilt-up panels
 - Panels cast on grade (rough surface)
 - Reinforced concrete
 - Anchored at the base

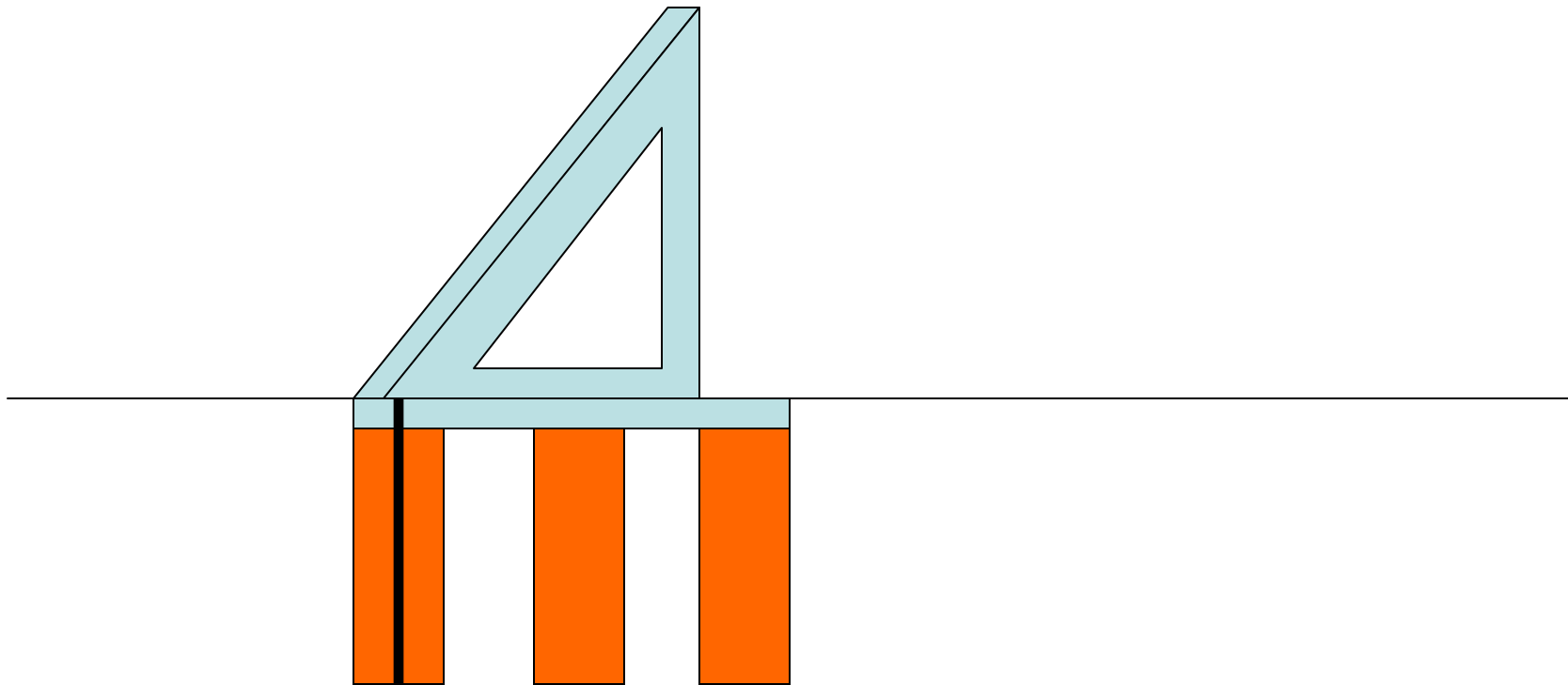
Case 3: Tilt-Up Panels

Profile:



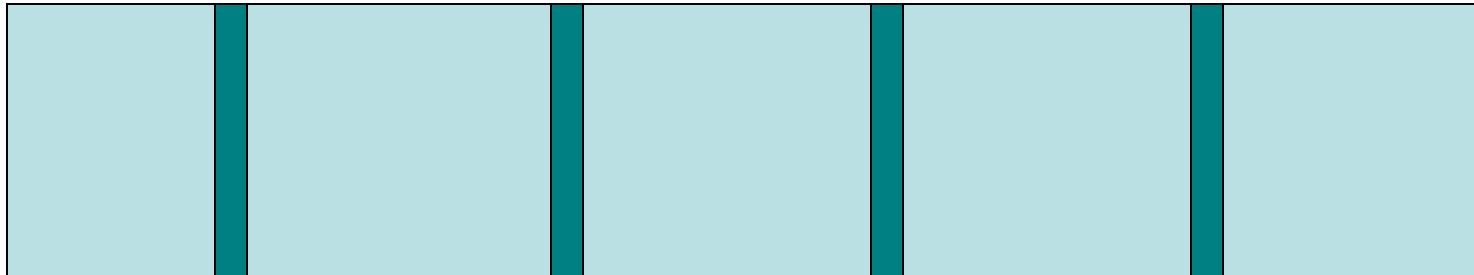
Case 3: Tilt-Up Panels

Profile:



Case 3: Tilt-Up Panels

Plan:



Case 3: Tilt-Up Panels

Pros:

- Lightweight
- Rapid construction
- Cost effective

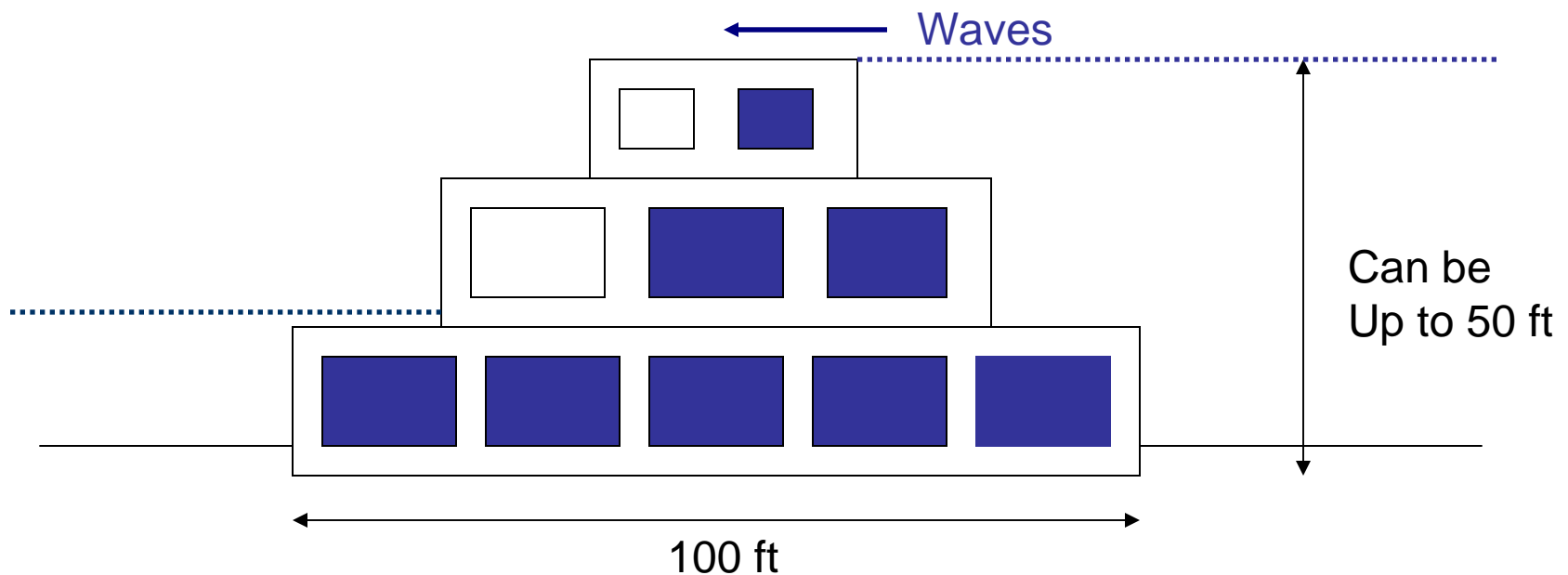
Cons:

- Importing materials for panels
- Poor aesthetics

OFFSHORE BARRIER STRUCTURES

Offshore Barrier Structure

- Cellular concrete barges
 - Float to site
 - Use water for ballast (free flooded)
 - 100 to 200 ft lengths (can be PT'd)
 - Transverse bulkheads at ends



Offshore Barrier Structure

Pros:

- Speed of construction
- Pre-fabricated
- No maintenance
- Self-contained wave break
- Self-filling/draining cells

Cons:

- May need additional anchorage
- Navigation hazard
- Rebar corrosion